OCEAN GALES AND STORMS, NOVEMBER 1935—Continued

Vessel	Voyage		Position at time of lowest barometer		Gale began November—	Time of lowest barometer November—	Gale ended November—	lowest barometer—	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of low, est barometer
	From—	To—	Latitude	Longitude									
NORTH PACIFIC OCEAN—Con.			° ′	° ′				*Inches*					
Olympia Maru, Jap. M. S.	Dairen	Los Angeles	45 46 N.	179 50 W.	21	4a, 22	22	28.79	SE	SW, 6	SW	SE, 11	None.
Susan V. Luckenbach, Am. S. S.	Los Angeles	Balboa	15 10 N.	95 20 W.	23	4a, 23	23	29.94	N	N, 9	N	N, 9	Steady.
San Pedro Maru, Jap. Jap. M. S.	Yokohama	San Francisco	42 56 N.	166 50 W.	21	Noon, 23	24	29.04	SE	SW, 6	WSW	WSW, 10	SW-WSW.
Getsuyo Maru, Jap. M. S.	do	Vancouver, B. C.	40 20 N.	155 01 E.	23	8a, 23	24	29.67	W	W, 7	NW	W, 9	
Golden Dragon, Am. S. S.	do	San Francisco	39 46 N.	164 15 W.	23	4p, 23	24	29.53	SW	SSW, 10	SSW	SSW, 10	None.
Arizonan, Am. S. S.	Los Angeles	Balboa	15 23 N.	95 29 W.	25	4a, 25	25	29.98	NE	N, 7	N	N, 8	NNE-N.
Golden Dragon, Am. S. S.	Yokohama	San Francisco	39 47 N.	151 07 W.	25	7a, 26	26	29.93	S	S, 8	S	S, 8	None.
Dorothy Luckenbach, Am. S. S.	Los Angeles	Balboa	16 21 N.	99 10 W.	29	6a, 28	29	29.89	N	ENE, 1	NNE	N, 10	

[1] Position approximate.

NORTH PACIFIC OCEAN, NOVEMBER 1935

By WILLIS E. HURD

Atmospheric pressure.—As in October, the average pressure throughout the Aleutian region and eastward to southern Alaska and British Columbia in November 1935 was much above the normal. The Aleutian cyclone, however, was fairly well developed, with an average reading of 29.77 inches at Dutch Harbor.

In middle latitudes a shallow belt of high pressure extended from coast to coast, but with the crest lying to the westward of southern Oregon.

In the Tropics pressures were for the most part somewhat below the normal, except at Manila, where the average was 0.01 inch above.

Cyclones and gales.—Although more pronounced cyclonic activity occurred over the North Pacific Ocean than in the preceding month, the actual degree and frequency of storminess evidenced by ships' reports showed only a very slight increase in November. The higher degree of storminess is indicated only by reports from two ships that encountered gales of force 11 on the northern routes, as compared with maximum wind forces of 10 in higher latitudes in October.

The month opened with a general lack of stormy conditions, except for a gale of force 9 which occurred near 32° N., 163° W., on the 1st, in connection with a depression to the northward of the Hawaiian Islands. On the 2d, strong northerly winds prevailed along the northern coast of California, reaching a maximum force of 8 a short distance northwest of Eureka during the passage of a LOW inland.

On November 3 a cyclone of moderate depth was centered near 35° N., 155° E., that caused widely scattered gales to the eastward of central Japan. The most important of these, a gale of force 11 from east-northeast, was encountered by the Norwegian motorship *Tricolor* near 41° N., 154° E., at a considerable distance north of the storm center. This disturbance moved northward during the 4th, accompanied by fresh to whole gales to the southeastward of the Kuril Islands.

During the 5th and 6th a shallow LOW northeastward of the Hawaiian Islands developed gales of force 8 to 9 within the restricted locality 25° to 35° N., 145° to 150° W. A later gale, of force 10, occurred in the near neighborhood on the 18th.

Between the 7th and 21st of the month sporadic gales occurred in various extra-tropical parts of the ocean. These, in general, were so localized that it is sufficient only to list their times and places of occurrence in the accompanying table of "Ocean Gales and Storms." Specific mention, however, may be made of the disturbance which lay over the northeastern part of the ocean on November 14 and caused high winds off the coast of Washington. In this storm the Dutch motorship *Bengalen* encountered a southwest gale of force 10, barometer 29.06, near 46° N., 130° W.

The most important storm of the month originated southeast of Kamchatka about November 20, and from the 21st to 27th lay over much of the north-central part of the ocean, with central pressures during the period mostly below 29 inches. The lowest pressure reported was 28.35 inches, read on the 22d on board the British steamship *Empress of Russia*, near 50° N., 173° E. Gales were experienced on the 21st to 23d over much of the region to the northward of the 35th parallel, between 175° E. and 160° W., with the highest velocity, force 11, from the southeast, barometer 28.79, reported by the Japanese motorship *Olympia Maru*, in 45°46′ N., 179°50′ W., on the 22d. No further gales in connection with this storm, notwithstanding its depth, were reported on dates later than the 23d. Late in the month, after filling in rapidly, it had moved to the Gulf of Alaska.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, November 1935, at selected stations*

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow	30.16	+0.17	30.58	9	29.40	18
Dutch Harbor	29.77	+.18	30.34	17	28.88	23
St. Paul	29.83	+.24	30.40	13	29.10	24
Kodiak	29.82	+.26	30.44	1	29.14	24
Juneau	29.98	+.22	30.52	1	29.42	27
Tatoosh Island	30.15	+.18	30.54	27	29.55	14
San Francisco	30.10	+.01	30.36	28	29.54	1
Mazatlan	29.91	+.02	30.02	25	29.82	5, 6
Honolulu	29.96	−.06	30.13	24	29.77	9
Midway Island	30.05	−.03	30.26	27	29.78	1
Guam	29.81	−.05	29.92	20	29.60	1
Manila	29.84	+.01	29.98	4	29.44	16
Hong Kong	30.02	------	30.13	7, 8	29.90	15
Naha	30.05	+.15	30.20	26	29.92	15
Chichishima	30.05	+.07	30.30	21	29.84	1
Nemuro	30.03	------	30.38	29	29.20	11

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Moderate weather conditions prevailed over the ocean during most of the final week.

Typhoon of November 10–20, 1935.—One typhoon occurred in waters of the Far East during the month. An account of the storm, prepared by the Rev. Bernard F. Doucette, S. J., of the Manila Observatory, is subjoined. From ships' reports, it appears that on the 13th, in 14°20′ N., 137°40′ E., the American steamship *Steel Traveler*, Penang to Honolulu, came within the influence of the disturbance, reporting a barometer reading of 29.58, closely preceded by a northeast gale of force 8. During the 15th the storm had increased considerably in intensity as it neared the Philippines. On this day the Dutch motorship *Tosari* encountered a west-southwest gale of force 11, with pressure down to 29.21 inches, near 12° N., 126° E.

A few days prior to the appearance of this typhoon in the Philippines, the one important marine casualty of the month occurred, when the British motorship *Silverhazel* on the 11th, amid heavy seas, broke in two on a rock in San Bernardino Straits. Four were lost in this wreck, including the master of the ship, Capt. H. A. Lennard. The surviving crew and passengers were rescued from a precarious position on the rock by the U. S. destroyers *Peary* and *Bulmer*. The *Silverhazel* for many years had been a regular and valued cooperating ship with the Marine Division of this Bureau, and her loss is deeply regretted.

Tehuantepecers.—Gales of the norther type were reported in the Gulf of Tehuantepec, as follows: On the 23d, force 9; on the 25th, force 8; on the 29th, force 10.

Monsoon winds.—Strong northeast monsoon winds occurred in the China Sea on the 7th and 8th, and during the middle of the month.

Fog.—Fog was reported on 5 days near the mouth of the Columbia River; on 7 days off the California coast; and on 3 days in and near the Gulf of Tehuantepec. Scattered fogs were reported during the first decade of the month to the eastward of the 180th meridian along the northern steamship routes.

Trans-Pacific aviation.—On the afternoon of November 22 the Pan American Airways' giant air liner *China Clipper* left Alameda, Calif., bound for Manila with nearly 2 tons of mail, thus inaugurating a commercial trans-Pacific air service. The entire flight of 8,602 miles, via Hawaii, Midway Island, Wake Island, and Guam, was made with favorable weather in 59 hours and 47 minutes, or in 13 minutes less time than was estimated for the voyage.

TYPHOON AND DEPRESSION OVER THE FAR EAST NOVEMBER 1935

BERNARD F. DOUCETTE, S. J.
[Weather Bureau, Manila, P. I.]

Depression, October 31 to November 3.—A depression formed during the afternoon of October 31, about 250 miles SSW. of Guam, and moved NW. until the next morning when it sharply recurved to the NE. and moved beyond the region of observation November 3. It seemed to be of little importance during this time.

Typhoon, November 10 to 20.—The morning of November 10, a depression appeared about 330 miles SSE. of Guam. It developed into a typhoon as it moved W. by N. for about 36 hours and then changed to the W., threatening the island of Yap. On the morning of the 12th, when about 120 miles to the east of this island, it began to move WNW., passing about 50 miles NE. of the station. The next day, it shifted its course to the W., moved thus for one day, and then changed to the WNW. It kept this course until it crossed Luzon, passing close to and N. of Baler, Tayabas Province, the morning of November 17. The next day it was located in the China Sea about 60 miles WSW. of Vigan, Ilocos Sur During the forenoon it inclined to the N., and the next day it recurved to the NE. and E., moving along the Balintang Channel and filling up over the Pacific Ocean regions.

This typhoon is of interest inasmuch as it threatened to interfere with the ceremonies connected with the inauguration of the new Commonwealth Government on November 15. The typhoon was about 400 miles to the ESE. of Manila on that day.

Barometric minima reported are as follows: Yap recorded 742.6 mm (29.237 in.), with SW. winds, force 3 to 4, on November 12, 4 p. m. Baler, Tayabas Province, P. I., had 735.22 mm (28.946 in.) on November 17, 5 a. m., together with WSW. winds, force 9. Vigan reported 738.53 mm (29.076 in.), November 17, 4 p. m., with NNW. winds, force 7.

The typhoon entered the China Sea at a time when the NE. monsoon was quite strong, and thus was prevented from taking a westerly course.

Newspaper reports (published Nov. 24 and 25) give the total of deaths due to this typhoon as 31, most of which were caused by drowning. It is interesting to note the remark of the Weather Bureau observer at Baler, who reported that none of the light material houses in his locality were damaged, nor were there any heavy rains. The previous typhoons of this season which passed near his station caused great damage to property; yet, from the viewpoint of the meteorologists, the later typhoon was much more extensive than the preceding disturbances. This is evident because great damage to property during the passage of this typhoon was reported in the Provinces of Isabela and Nueva Vizcaya.